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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,480	09/15/2005	Masahiro Yamakawa	4670-0110PUS1	8164

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EXAMINER	
REDDY, KARUNA P	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
04/29/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/549,480	YAMAKAWA ET AL.	
	Examiner	Art Unit	
	KARUNA P. REDDY	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2 and 4-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed 4/15/2009. Claim 3 is cancelled; and claim 13 is amended. Accordingly, claims 1-2, 4-13 are currently pending in the office action.

2. It is noted that Yamazaki et al (US 6,656,633 B2), used in 102(e)/103 rejection in an earlier office action, has a PGPub (US 2002/0034686 A1 - publication date of 3/21/2002) which qualifies as prior art under 102(b)/103. Therefore, examiner reopened prosecution of this case and set forth new grounds of rejection as shown in paragraphs 4 and 5 below.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102/103

4. Claims 1-2, 4, 6-7 and 9-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamakawa et al (US 2002/0034686 A1).

Yamakawa et al disclose a polymer binder for electrode comprising a) structural units derived from monofunctional ethylenically unsaturated carboxylic acid ester monomer (paragraph 0016) and examples include 2-ethylhexyl acrylate, n-butyl acrylate (paragraph 0031); b) structural units derived from an ethylenically unsaturated carboxylic

acid monomer (0aragraph 0017) and examples include acrylic acid, methacrylic acid (paragraph 0032); and c) structural units derived from a methacrylonitrile monomer (paragraph 0018). The binder exhibits enhanced electrochemical stability and is useful for making an electrode of a lithium ion secondary battery (abstract). Lithium ion secondary batteries include electric double layer capacitor (paragraph 0004). The polymer preferably further comprises d) structural units derived from a polyfunctional ethylenically unsaturated carboxylic acid monomer such as ethylene glycol dimethacrylate, trimethylolpropane trimethacrylate, and polyalkylene glycol dimethacrylates such as tetraethylene glycol dimethacrylate (paragraph 0034). The mass percentages of components a-d in examples 1 and 2 of prior art are essentially similar to parts by mass of examples 1 to 4 in table 1 of instant invention and read on the mole percentages of present claims. The liquid medium for the preparation of the binder composition can be either water or an organic liquid substance (paragraph 0052). The polymer particles have a volume average particle diameter in the range of 0.001 to 500 μm and overlaps with the particle size of present claims (paragraph 0046).

The slurry comprises binder, active material and optional additives (paragraph 0057). As specific examples of the active material there can be mentioned carbonaceous material (paragraph 0059) that reads on claim 4. Further, electrically conductive materials including carbon such as graphite and active carbon can be incorporated in the slurry (paragraph 0062). Additives such as a viscosity modifier and a fluidizing agent can be added in the binder composition to improve properties of the slurry. As specific examples of the additives mention can be made of cellulose materials such as carboxymethyl cellulose (paragraph 0055) and reads on the thickener of claim 6. The electrode is fabricated by a procedure wherein a collector such as metal foil is

coated with the slurry and thus formed coating is dried (paragraph 0065). A metal foil such as aluminum foil is coated with slurry and the formed coating is air dried at 120^0C (paragraph 0084). A battery is fabricated by using circular positive electrode or negative electrode, a lithium metal counter electrode and a separator, which is sandwiched between the positive electrode or negative electrode and a lithium metal counter electrode. An assembly of the two electrodes and separator is placed in a coin shaped outer casing. An electrolyte solution is injected into the casing and fabricated assembly is covered with a stainless steel cap (paragraph 0096). The fabricated assembly reads on the electric double layer capacitor of claims 11 and 13.

Yamakawa et al is silent with respect to glass transition temperature of the binder polymer.

However, given that Yamakawa et al teach essentially the same binder polymer and comprises monomer units in similar mole% as recited in present claims, one of ordinary skill in the art would have a reasonable basis to believe that binder polymer of Yamakawa et al must inherently have the same glass transition temperature as the presently claimed binder polymer. Case law holds that a material and its properties are inseparable, See *In re Spada,* 911 F.2d 705,709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Since PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobviousness difference.

In light of the above, it is clear that Yamakawa et al anticipate the present claims.

Alternatively, presently claimed glass transition temperature would have been present once the binder polymer is prepared based on the teachings of Yamakawa et al.

Claim Rejections - 35 USC § 103

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al (US 2002/0034686 A1) as applied to claims 4 above, and further in view of Kasuke (JP 08-107047).

The discussion with respect to Yamakawa et al in paragraph 4 above is incorporated herein by reference.

Yamakawa et al is silent with respect to carbonaceous material comprising active carbon having a specific surface area of 30 m^2 or more.

However, Kasuke teaches an electric double layer capacitor where in the specific surface area of an active carbon material used as an anode and cathode is specified as 1000 m^2/g to 2500 m^2/g and 500 m^2/g to 1500 m^2/g respectively. These surface areas are specified to improve the capacitor output capacity (abstract). Therefore, it would have been obvious to one skilled in the art at the time invention was made to use carbonaceous material comprising active carbon having surface area between 500 to 2500 m^2/g in the binder composition of Yamakawa et al, because it has been proven successfully by Kasuke and one of ordinary skill in the art would have expected the specified surface area of 500 to 2500 m^2/g to result in improvement of capacitor output capacity, motivated by expectation of success.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al (US 2002/0034686 A1) as applied to claim 7 above, and further in view of Kasuke (JP 08-107047).

The discussion with respect to Yamakawa et al in paragraph 4 above is incorporated herein by reference.

Yamakawa et al differs with respect to drying temperature.

However, Yamakawa et al teaches that metal foil such as aluminum foil is coated with slurry and the formed coating is air dried at 120^0C (paragraph 0084). Given that Yamakawa et al teach drying at temperatures of 120^0C, it is the examiner's position that drying it at even higher temperatures of from 120^0C to 250^0C to speed the process of drying, if slurry comprising the binder and carbanaceous material can handle high temperatures of up to 250^0C without degradation, is within the scope of one skilled in art at the time invention was made.

Response to Arguments

7. Applicant's arguments, filed 4/15/2009, with respect to rejection of claims 1-2 and 4-12 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8, and 12-17 of U.S. Patent No. 6, 656, 633 B2; and claims 1-2 and 4-11 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 and 6-10 of copending Application No. 10/567, 119, have been fully considered and are persuasive. The rejection of claims 1-2 and 4-12 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8, and 12-17 of U.S. Patent No. 6, 656, 633 B2; and claims 1-2 and 4-11 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 and 6-10 of copending Application No. 10/567, 119 has been withdrawn in view of the filing of a terminal disclaimer.

8. Applicant's arguments, filed 4/15/2009, with respect to rejection of claim 13 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, have been fully considered and are persuasive. The rejection of claim 13 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in view of the amendment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. P. R./
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796